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October 3, 2017

MEMORANDUM

TO: Power Committee

FROM: Mike Starrett

SUBJECT: Regional Solar Development & PURPA

BACKGROUND:

Presenter: Mike Starrett, Analyst

Summary: The majority of utility scale solar operating within the region has come online within the last five years. This resource is now over 300 MW and the pipeline of proposed new solar is at GW scale. Nearly all of this development has been and would be owned by third parties who sell their energy to utilities through PPAs made available on the account of the Public Utility Regulatory Policies Act of 1978 (PURPA). PURPA requires that utilities purchase all energy from qualifying facilities QFs (primarily renewables, and all smaller than 80 MW) at a rate known as the utility's avoided cost. The avoided cost is the price the utility would have paid "but for" the purchase of energy from the QF.

Differences in utility-specific published avoided costs and state level policy across region has led to very geographically clustered development. Oregon and Idaho have seen the most PURPA development thus far with very little activity in Washington and Montana. This presentation will describe the conditions which have led to significant PURPA development, how that has changed in the states where PURPA resources have come online, and how that may be changing in states which have not yet seen substantial development.

Regional Solar Development & PURPA

Mike Starrett
October 10, 2017

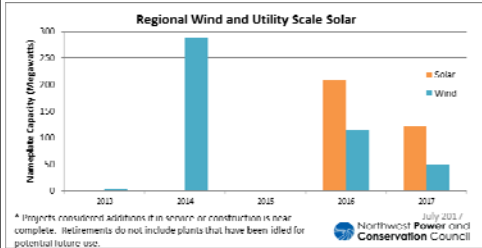


Background and Relevance

- ✓ The vast majority of NW solar has been built in the last 5 years
- ✓ The pipeline of proposed solar is substantial and is not without risk
- ✓ Nearly all of the candidate new solar resource would be PURPA projects
- ✓ Commissions are contemplating PURPA



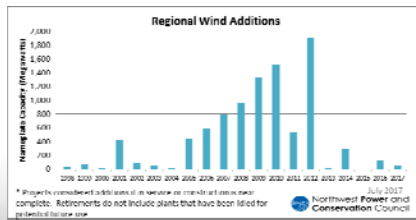
The vast majority of NW solar has been built in the last 5 years



~330 MW of new utility scale solar online since 2013 (Almost all PURPA)

~18,000 MW new resources since 1995
~63,000 MW total regional nameplate

Wind growth over last 20 years for scale:



The vast majority of NW solar has been built in the last 5 years

Behind-the-meter solar is also growing in Oregon & Washington

Additions in 2015 (MW):

	Residential	Commercial	Industrial	Cumulative
Oregon	46	38	3.25	87
Washington	52	9	0.05	61
Idaho	3.5	2	.1	5.5
Montana	5	2.25	0	7
PNW Region	106.5	51.25	3.4	161

The pipeline of proposed solar is substantial and is not without risk

- **A single IOU is taking delivery of 290 of the recent 330 MW**
- **Pipeline of PURPA projects is at GW scale**
 - **Example: An Oregon utility has ~465 MW of executed QF PPA's* and an additional ~490 MW of proposed PPAs**
 - **Counter-Example: Washington utilities have had very little 3rd party development activity**

*Note: An executed PPA does not guarantee that project will move forward

Nearly all of the candidate new resources would be PURPA projects

- **PURPA requires utilities to accept energy from QFs and pay for it at their avoided cost rate**
- **Avoided cost schedules are readily accessible and may include step-increases between resource sufficiency and deficiency time frames**
- **QFs can wheel, but must be able to find transmission**

Commissions are contemplating PURPA (1/3)

- **If a utility has a standard offer with sufficient contract length at utility scale...**
 - Land use regulations can make development in populated areas challenging
 - Transmission system at key interconnection points can be fully subscribed
- **Otherwise, if the standard offer is sufficiently small (in MW) or short (in time), then project financing is a significant barrier**

Commissions are contemplating PURPA (2/3)

- **Idaho** (2015: Order No. 33357)
 - PUC shorted QF fixed pricing term from 20 years to 2 for all projects > 100 kW; eligible for capacity payments only once utility is deficient
- **Oregon** (2017: Order 17 310 under UM 1854)
 - Utilities had been required to present standard offer of avoided cost rates to all QFs < 10 MW
 - Both IOUs have requested relief; PGE recently granted relief by reducing cap to 3 MW for solar QFs
- **Montana** (2017: Order No 7500 under D2016.5.39)
 - PSC cut standard offer (projects < 3 MW) rates ~40% from \$66/MWh reduced contract length from 25 years to (effectively) 5 years
- **Washington** (Ongoing: U-161024)
 - UTC considering PURPA this as part of IRP hearing

Commissions are contemplating PURPA (3/3)

- **Highlight of two risks discussed in final orders and ongoing dockets**
 1. Fixed prices over long contracts place all risk on rate payers
 2. Uncoordinated PURPA development may not be least-cost use of transmission system

Mileposts for future evaluation

- Some avoided cost rates (the \$ a utility would spend “but for..”) are sufficiently high to be economic
- Distant QFs can wheel to get to those utilities if transmission is available
- Utilities which are required to have standard offer with long-term price security at utility scale are most likely to see signed PPAs for QFs
- The vast majority of QFs with signed PPAs are not built, typically due to transmission

